

WEATHERIZATION PROGRAM NOTICE 03-6
EFFECTIVE DATE: September 26, 2003

SUBJECT: MANUFACTURED HOME ENERGY AUDIT (MHEA) SOFTWARE UPGRADE AVAILABILITY AND LICENSING REQUIREMENTS

PURPOSE: To provide States instructions for obtaining the Weatherization Assistance Program's upgraded audit software package for manufactured/mobile homes.

SCOPE: This guidance applies to distribution and licensing of the latest version of the Manufactured Home Energy Audit (MHEA).

BACKGROUND: Weatherizing mobile homes in all climates has been a demanding challenge for the Weatherization Program throughout the years. Developing an audit tool ready for network use that is specifically suited to the special and difficult characteristics of manufactured housing has been equally difficult. Oak Ridge National Laboratory has been working for several years with the MHEA Steering Committee to provide a computer audit that meets the high standards that the network has come to expect for its other audit tools, one that will genuinely help promote the application of improved weatherization approaches in mobile homes.

PROCEDURES: DOE is pleased to announce the long-awaited MHEA is ready for the final phase of field testing and use. This version is a Windows compatible version of the audit that has added base load measures consistent with the Program's whole house energy approach. This energy audit tool is being distributed as a companion to NEAT in the package of programs called the Weatherization Assistant. The software package is licensed and will be distributed according to the procedures described in the attachment. The package is still available at no cost to regional, state, and local Weatherization Agencies. The Weatherization Assistant is posted to the WAPTAC and ORNL websites, as given in Attachment A.

While DOE does not generally require the use of a separate audit to address manufactured housing, DOE anticipates that the MHEA audit, much like the NEAT audit, will become an integral part of the Weatherization Program in the very near future. Making this audit available at this time is designed to begin a "work in progress" that will provide DOE valuable insight into how the audit will perform in the real world of weatherization and allow DOE to make improvements in future versions. The Program Year 2004 Grant Guidance will further encourage all States to begin to integrate this audit into their programs. In doing so, DOE would like to get feedback from the States and local user on implementing this audit and any suggestions on how it may be improved. In order to incorporate this audit in their programs, States will need to get specialized training for their local agencies as described below.

States are reminded that the MHEA audit is not required for use by the Weatherization network. Also, for the limited number of States which already have a DOE-approved mobile home audit as a part of their program they are not expected to make any change to their audit nor will they be required to switch to MHEA.

VALIDATION: DOE recognizes that field validation of MHEA is an important and necessary part of MHEA's adoption by the weatherization network. A validation program that assesses the audit's accuracy and the validity of its recommendations will help to identify and resolve any remaining issues with MHEA's performance as it goes into widespread use. Once a number of States have incorporated this audit into their program, DOE will contact a representative sample of States with respect to climate and other factors to participate in a volunteer cooperative validation effort. Volunteers will be asked to provide information such as pre- and post-weatherization billing data, list of measures and other work performed on the house, and cost breakdowns. An evaluation plan will be developed and distributed to interested parties in the near future that will provide details on the steps needed to implement the validation program and the roles and responsibilities of the various participating organizations. Of course, DOE welcomes feedback on your field experience with MHEA whether you are part of the validation effort or not.

TRAINING AND IMPLEMENTATION: There will be a substantial need for training on the appropriate use of the audit, both in the field and at the computer terminal. DOE is committed to assisting in every way to help facilitate this training. States, particularly those that wish to incorporate the MHEA into their programs this Program Year, should contact their respective Regional Office with their training needs so that this training can be scheduled. There will also be a need for States to submit their input parameters to DOE for review per WPN 01-4, and to their Regional Office for review and approval in annual State Applications (State Plans). States, Program Managers, and oversight technical staff should set procedures for establishing and reviewing "Set Up" input parameters to ensure reasonableness and compliance with State standards and guidelines. Crucial to the output are factors that should be stated in WAP State Plan such as candidate measures in Set Up and other important input variables such as beginning/existing R-values. See Attachment B for further issues related to implementation.

John Millhone
Program Manager
Weatherization and Intergovernmental Program
Energy Efficiency and Renewable Energy

Attachments:

- A - Instructions for Obtaining the Audit Software Upgrade
- B - Notes for MHEA Implementation

Attachment A

INSTRUCTIONS FOR OBTAINING THE AUDIT SOFTWARE UPGRADE

This guidance applies to distribution of the latest version of the Weatherization Assistant (WA) software (Version 7.4) containing the National Energy Audit Tool (NEAT) for site-build homes and the Manufactured Home Energy Audit (MHEA) for manufactured homes.

The Weatherization Assistance Program's previous 2001 release of its Weatherization Assistant software (Version 7.1) did not include an operable Windows version of MHEA. This release (Version 7.4) contains fully operable versions of both NEAT and MHEA, including major revisions to MHEA's calculation engine and user interface. Although MHEA's construction description options differ from NEAT's, the means of entering data and navigating through the program are now identical with NEAT's. The new job import and export options give upward compatibility with the prior version of NEAT and allow NEAT and MHEA jobs to be easily shared either through physical media or e-mail. These new features are described in the revised MHEA User's Manual, which is also now available. Although there have been some changes in NEAT as well, they do not warrant a new publication of NEAT's user's manual.

PROCEDURES:

Version 7.4 of the Weatherization Assistant is available over the Internet, allowing you to download an entire installation CD. Once downloaded you may create copies of the CD for further distribution or as backups. Follow the instructions under **Downloading** below to obtain a copy of the program in this manner as well as PDF formatted copies of both the NEAT and MHEA User's Manuals.

Alternatively, or in addition, you may obtain a physical CD and a hard copy of the MHEA User's Manual by following the instructions under **Physical Distribution** below.

Submission of a license agreement is not necessary if you or your state have previously submitted a license for the Weatherization Assistant software. Any previously submitted license agreement suffices for all agencies within the Weatherization Assistance Program network contracted by the state who submitted the prior agreement. If you do not have a license agreement and require one for internal purposes, make the need known to the contact given under **Physical Distribution** below.

Receipt of this Program Notice through the regularly established channels of the Program constitutes permission to download and use the software. However, you will be required to enter the password supplied with this notice, as given in the **Installation** discussion below.

Downloading

The software is available for downloading from the Internet address:

<http://weatherization.ornl.gov/WA/>

or <http://www.waptac.org/sp.asp?id=6871>

Contained at these locations are the following items:

- (1) wa7433.exe – a self-extracting compressed installation file for the Weatherization Assistant;
- (2) MHEA Users.pdf – a PDF formatted version of the new MHEA User’s Manual; and
- (3) NEAT Users.pdf – a PDF formatted version of the NEAT User’s Manual (unchanged from the previous release).

Selecting the wa7433.exe item will prompt your Internet browser to display a download window. One of the options in this window will be to save the file. Choosing this option will present you with the standard Windows “Save As” window asking you where on your computer you wish to have the file saved. Choose an existing location (folder) on your computer in the “Save in” field or click on the “Create New Folder” button to create a new location into which to save the file, then double click on the folder to select it. You are encouraged to leave the “File name” as the default automatically entered in this field (i.e., wa7433.exe). Once executed to install the program (see **Installation** below), this file will not be needed for normal operation. However you would need the file if you ever needed to re-install the program. Thus, it should be saved to a safe location. After completion of the download, you may exit your browser or continue by downloading the PDF-formatted user’s manuals.

Selecting either of the PDF files will either present you with the same download window as above or automatically open the file with the PDF software, if it is installed on your computer. If you are presented with the download window, it is your choice whether you download the manuals or not. You will not be able to view them unless you eventually install the PDF software on your computer. It is suggested that if you download the manuals, you place them in the same folder as you chose for the wa7433.exe file, thus creating a complete image of the installation CD.

If selecting the PDF files automatically opens the files with the PDF software, already installed on your computer, you may then use that software’s “Save As” feature to save the files to a folder on your computer, likely the same folder where you saved the wa7433.exe file.

If you have saved the wa7433.exe file and the PDF manual files to the same previously empty

folder on your computer, this folder becomes an image of the installation CD. If you have means to create a CD from data on your computer, a CD you create by copying the contents of this folder will be the same as the CD you would obtain by ordering the software, as described under **Physical Distribution** below.

Physical Distribution

The Weatherization Assistance Program will again subsidize distribution of the software package to states and agencies within the Program, making it available at no cost on the regional, state, or local levels. Each package will nominally contain an installation CD with the Version 7.4 of the Weatherization Assistant (NEAT and MHEA) software and a hard copy of the new MHEA User's Manual. Changes to NEAT have not been substantial enough to warrant re-publication and distribution of NEAT's user manual. If additional copies of the existing NEAT manual are required, indicate this in your request. Requests for packages must be made by a region or the state on behalf of its agencies. However, if a state directs and supplies the necessary mailing information, copies may be sent individually to its agencies. Otherwise, all requested packages will be sent to the state for distribution. For each request, whether for a single combined mailing to the state or for individual mailings to agencies, please indicate in your request the number of packages, the address to which the packages are to be sent, and to whose attention the mailing should be directed. Send written requests to:

Michael B. Gettings
Oak Ridge National Laboratory
P. O. Box 2008, Bldg 3147
Oak Ridge, TN 37831-6070

or e-mail: gettingsmb@ornl.gov

Installation

Installation from a physical CD or from a downloaded image of the CD follows the same procedure. You may either locate the wa7433.exe file in Windows Explorer or My Computer and double click on it or use the Start\Run option on your desktop to locate and initialize installation. Whichever process you use, follow the instructions given by the installation routine. If asked for a password, enter the following:

wa7433

We suggest you install the program in the default location, but the routine does allow you to select another location if you desire. Do not load the program over (into the same location as) any other existing version of the Weatherization Assistant. This will insure that any building descriptions entered with the previous version will remain undisturbed. Version 7.1 NEAT jobs can be imported to Version 7.4 using the program's new "Import" feature. See the MHEA User's

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Manual for more details.

The installation process will place a new icon on your desktop called “Weatherization Assistant 743,” to distinguish it from icons of earlier versions. To run Version 7.4 of the Weatherization Assistant, just double click on this new icon.

ATTACHMENT B

NOTES FOR MHEA IMPLEMENTATION

DOE highly encourages states and weatherization agencies to receive training on MHEA before implementing this new audit tool. As a minimum, users should completely read and understand the MHEA User's Manual which is being distributed along with the Weatherization Assistant program itself. Although MHEA has many similarities to NEAT, there are sufficient differences to warrant a thorough examination of MHEA before its use. In particular, attention should be focused on the following areas that could lead to programming errors within MHEA:

- Costs for Measures – A savings-to-investment ratio (SIR) is based on a ratio of benefits to costs. Therefore, the costs for measures entered in MHEA's parameter set are as equally important as input describing the home and its equipment in order to obtain accurate weatherization recommendations.
- Space-Heating Equipment Efficiencies – Efficiencies of space-heating equipment must be entered with their correct units. This is typically steady-state efficiency (SSE) for existing fossil-fired space-heating systems (as measured by a flue-gas analysis or obtained from nameplate information) and annual fuel utilization efficiency (AFUE) for new fossil-fired space-heating systems.
- Cooling Equipment Efficiencies – Efficiencies of cooling equipment must be entered with their correct units. This is typically energy-efficiency ratio (EER) for room (window) air conditioners and seasonal energy efficiency ratio (SEER) for central air conditioning systems.
- Existing Insulation Levels – MHEA's energy predictions and weatherization recommendations are very sensitive to existing insulation levels when the levels are very small (between 0 to 2 inches). Therefore, accurate measurement of small insulation levels is very important.
- Roof Color – The color of most mobile home roofs should be considered to be "normal or weathered." A "white or reflective" roof color should be chosen only when a white elastomeric roof coating has been recently applied or when the roof is completely shaded by trees during the summer.